

## **REMARKS/ARGUMENTS**

Claims 1-5, 13-17, and 19-20 are pending. Claims 1, 5, and 13 are amended, and claims 21-32 have been added. Reconsideration is respectfully requested in light of the amendments and remarks contained herein.

### ***Claim Rejections – 35 U.S.C. § 101***

Claims 1-5, 13-17, and 19-20 are rejected under 35 U.S.C. § 101. Claims 1, 5, and 13 are amended to explicitly recite that a processor is used in simultaneously solving the constraints. These amendments tie the method claims to a particular machine. In light of the amendments, it is respectfully requested that the § 101 rejections be withdrawn.

### ***Claim Rejections – 35 U.S.C. § 103***

Claims 1-5, 13-16 and 19-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sweitzer (U.S. Patent No. 6,018,616) in view of “Automatic Generation of Test Oracles – From Pilot Studies to Application” by Feather. These rejections are respectfully traversed.

Claim 1 has been amended to recite that a plurality of constraints for a test item variant are received and that the test item variant is generated by generating values for the variables using a simultaneous constraint solver, where the simultaneous constraint solver resolves the plurality of constraints. These amendments are supported throughout the specification including at pages 66-67, for example. It is respectfully submitted that the combination of Sweitzer and Feather does not teach these claim elements.

For example, the combination of Sweitzer and Feather does not teach generating values for the variables using the simultaneous constraint solver. The Office relies on Sweitzer for allegedly teaching generating a test item variant by assigning values to the variables using a constraint solver. As noted at column 11, lines 3-6 of Sweitzer, random values are selected as possible values for the variables (e.g., ‘A’, ‘B’, and ‘C’ of FIG. 3). A list of constraints is then sequentially evaluated at col. 12, lines 41-46, where

if a constraint is not satisfied, the current pass through the list is abandoned and evaluation restarts from the top of the list. A valid instance of the problem results when the end of the variation rule list is reached. Thus, Sweitzer discloses a two step process where the constraints are not even considered in generating random values for the variables.

In stark contrast, claim 1 requires consideration of the constraints in generating values for the variables. Such a configuration offers time savings over the Sweitzer method which randomly picks variable values and then sequentially checks those variables. In contrast, the method of claim 1 ensures that the constraints are satisfied in the single step of generating values for the variables using the simultaneous constraint solver.

Feather does not make up for this missing teaching in Sweitzer. Page 4, col. 2, paragraph 1 of Feather cited by the Office does not teach a method for solving multiple constraints simultaneously. The cited portion of Feather describes relaxing constraints, such that those constraints do not necessarily need to be satisfied. The cited portion of Feather does not teach generation of values for variables at all, let alone generating values for the variables using a simultaneous constraint solver.

Because neither Sweitzer nor Feather alone or in combination teach generating the test item variant of the test item by generating values for the variables using a simultaneous constraint solver, it is respectfully requested that the § 103 rejection of claim 1 be withdrawn.

Similar amendments have been made to independent claims 5 and 13. It is respectfully requested that the § 103 rejections of claims 5 and 13 be withdrawn for similar reasons as offered for claim 1.

#### New Claims

Claims 21-33 have been added. Claims 21-32 are system claims that are similar to the pending method claims. The computer aspects of these new claims are supported throughout the specification including at page 9 and FIGS. 1-107, which show computer-generated screen displays.

Claim 33 is supported throughout the specification, including at pages 66-67, for example. It is submitted that claim 33 is allowable because the cited references do not

teach a simultaneous constraint solver that resolves all of the constraints pertaining to the variables. As noted above, the cited portion of Feather, relied upon by the Office as allegedly teaching a simultaneous constraint solver, actually teaches relaxing constraints. Relaxing constraints is not solving the constraints at all but is instead permitting some constraints not to be fulfilled. Because the alleged simultaneous constraint solver in Feather does not enforce all of the constraints, it is respectfully submitted that the Office has not cited to an enabling disclosure that would teach one skilled in the art how to generate values for the variables using a simultaneous constraint solver, where the simultaneous constraint solver resolves all of the plurality of constraints pertaining to the variables.

It is noted that the Applicants have not presented arguments with respect to certain of the dependent claims in the instant application. This is done without prejudice to the Applicants' right to present arguments with respect to each of the claims at any point in the future should it become necessary. Further, because each of the dependent claims in the application depends from an independent claim that is itself allowable, the dependent claims are allowable for at least the reasons set forth with respect to the independent claims.

### ***Conclusion***

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

*(continued on next page...)*

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

The Commissioner is authorized to charge any fees that may be required by this paper to Jones Day Deposit Account No. 50-3013.

Respectfully submitted,

JONES DAY

By: MATTHEW W. JOHNSON  
Matthew W. Johnson  
Registration No. 59,108

W. Joseph Melnik  
Registration No. 48,741

Intellectual Property Group  
51 Louisiana Avenue, N.W.  
Washington, D.C. 20001-2113  
(202) 879-3939 Telephone  
(202) 626-1700 Facsimile